

ABSTRACT

5 A method of video motion estimation is described for determining the
dominant motion in a video image. The dominant motion is defined by a
parametric transform, for example a similarity transform. In the preferred
embodiment, selected pairs of blocks in one frame are traced by a block
10 matching algorithm into a subsequent frame, and their change in position
determined. From that information, an individual parameter estimate is
determined. The process is repeated for many pairs of blocks, to create a large
number of parameter estimates. These estimates are then sorted into an ordered
list, the list is preferably differentiated, and the best global value for the
15 parameter is determined from the differentiated list. One approach is to take
the minimum value of the differentiated list, selected from the longest run of
values which fall below a threshold value. Alternatively, the ordered list may
be examined for flat areas, without explicit differentiation. The technique is
particularly suited to low complexity, low bit rate multimedia applications,
20 where reasonable fidelity is required without the computational overhead of full
motion compensation.

(Figure 2)